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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,048	09/22/2003	Barry N. Jackson	RWHI-0005	7848
20558	7590	05/13/2004	EXAMINER	
KONNEKER & SMITH P. C. 660 NORTH CENTRAL EXPRESSWAY SUITE 230 PLANO, TX 75074			CAMPBELL, THOR S	
			ART UNIT	PAPER NUMBER
			3742	

DATE MAILED: 05/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/667,048	<b>Applicant(s)</b> JACKSON ET AL.	
	<b>Examiner</b> Thor S. Campbell	<b>Art Unit</b> 3742	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>09/22/03</u> | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lesage (US 4948948) in view of Bradenbaugh (US 6633726).

Lesage discloses a water heater comprising a tank adapted to store therein a quantity of water to be heated, said tank having a plurality of contiguous vertical zones of unequal volumes and vertically spaced plurality of unequal wattage electrical heating elements individually controllable and extending into said tank, each electrical heating structure serving a different one of said zones. Lesage does not describe arranging the heating elements such that said zones are provided with substantially equal heating wattage densities.

Bradenbaugh discloses a water heater comprising multiple heating elements, individually controllable, corresponding to different zones of heating within the tank and further that regardless of the exact control circuitry used, or whether a single controller or multiple controllers are implemented, the heating elements are activated so that heat energy being transferred to the tank is distributed in a balanced or uniform manner. Whatever specific sequencing is employed, the controller helps to avoid uneven heating of the water in the tank. Uneven heating generally occurs in conventional heating systems where the bulk of water heating is accomplished with a heating element positioned near the bottom of the heater tank.

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This configuration often results in the creation of "stacking," where water that is heated rises to the top of the tank and becomes super-heated, while non-uniform temperature strata are formed in the lower portion of the tank. To make matters worse, the heat accumulation at the top of the tank tends to rapidly dissipate because the insulation 13 in the tank cannot effectively retain the high energy heat from the super heated water. By reducing the occurrence of hot or cold spots in the strata from the top to the bottom of the tank, the creation of super heated water is reduced and efficiency is increased."

It would have been obvious to one of ordinary skill in the art at the time the invention was made, in view of the teachings of Bradenbaugh, to modify the device of Lesage to use a plurality of unequal wattage heating elements corresponding to different zones within the tank while maintaining the desired even heating, i.e. equal heating wattage density, by providing the heating elements in a fashion that the top heating element of Lesage having the higher power rating, heats a greater volume than the other lower power rated heating elements.

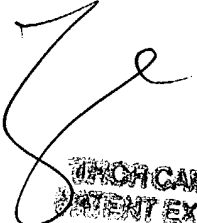
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thor S. Campbell whose telephone number is 703-306-9042. The examiner can normally be reached on Tue-Fri 5:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Pothier can be reached on 703-308-0265. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TSC  
5/12/04



THOMAS CAMPBELL  
PATENT EXAMINER